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(54) HIGH TENSILE STRENGTH COLD ROLLED STEEL SHEET AND ITS MANUFACTURE

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a high tensile strength cold rolled steel sheet having ≥980 N/mm2 tensile strength and low yield ratio and excellent in elongation, bendability, and delayed fracture characteristics.
SOLUTION: The cold rolled steel sheet has a composition containing 0.10-0.20% C, ≤0.8% Si, 1.6-2.7% Mn, ≤0.03% P, ≤0.010% S, 0.005-0.10% Al, 0.0020-0.0080% N, and {48/14N(%)+0.005} to 0.12% Ti and further containing, if necessary, proper amount of one or more kinds among Cr, Mo, Nb, V, B, Ca, Cu and Ni and also has a structure containing ferrite, martensite, and austenite, each having ≤5 μm grain size, in the prescribed proportion. At manufacture, the cold rolled steel sheet of specific composition is heated up to a temperature determined in view of the composition, cooled from 600-750° C down to 200-420° C at a rate of (10 to 200)° C/s, held in the temperature region for 80 s to 5 min, and cooled down to room temperature to undergo annealing treatment.